

REMARKS/ARGUMENTS

1. Rejection of claims 1, 2, 4, 6-10, 12 & 14-16 under 35 U.S.C. 103(a) as being unpatentable over Kodate (US 5,748,266) in view of Admission and Nishida et al. (US 6,965,419):

Claim 9:

Claim 9 has been amended to overcome this rejection. Specifically, the limitations "the black matrices being covered by the color filters" and "each of the photo spacers is in direct contact with the lower surfaces of adjacent color filters" have been added to claim 9. These limitations find support in paragraph in Fig.4, for instance, and no new matter is introduced.

As shown in Fig.4 of the claimed invention, the photo spacer 70 is in direct contact with the lower surface of the color filters 74, corresponding to the black matrix 76, but not in contact with the black matrix 76.

Kodate does not teach the spacer is corresponding to the black matrix. As illustrate in Kodate's col. 7, lines 4-32, and Fig.8, the pillar (spacer) 78 is not corresponding to the black matrix 66.

APA teaches the spacer is in contact with the counter electrode 36, but fails to teach the spacer is in direct contact with the lower surface of the color filters as shown in Fig.2.

Nishida teaches forming the spacer 26 corresponding to the black matrix 9, but the spacer 26 is in direct contact with the black matrix 9 and the edge of the color filters 6, 7, or 8 as illustrated in Nishida's col. 16, lines 34-46, and Fig.12a. Nishida fails to teach forming the spacers 26 in direct contact with the lower surface of the color filters 6, 7, or 8.

MPEP 2143.03 clearly teaches: "to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art" Also, *in re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art". Since none of the cited prior arts has disclosed that the spacer in direct contact with the lower surface of the color filter, the amended claim 9 should be patentable over the cited prior art.

MPEP 2143.01 (I) also teaches: "the prior art must suggest the desirability of the claimed invention". In addition, *in re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). Nishida's invention is proposed to make the pixel regions of different colors have different cell gaps by altering the thickness of the color filters in different pixel regions, so as to improve display effect as illustrated in Nishida's col. 16, lines 41-44, Fig.11(b) and col. 17, lines 6-18. Accordingly, the spacers 26 of Nishida's teaching have to be located corresponding to crossing locations between the scanning line 16 and the signal lines 1. On the other hand, the claimed invention is directed to provide a uniform common voltage. Since the purpose of Nishida's teaching is different from the claimed invention, it lacks motivation to combine Nishida with Kodate to obtain the claimed invention.

Therefore, claim 9 should be allowed, and reconsideration of claim 9 is requested.

Claims 10, 12, and 14-16:

Claims 10, 12, and 14-16 are dependent on claim 9, and should be allowed if claim 9 is found allowable. Reconsideration of claims 10, 12, and 14-16 is therefore requested.

5 Claim 1:

Claim 1 has been amended to overcome this rejection. Specifically, the limitations “the black matrices being covered by the color filters” and “each of the photo spacers is in direct contact with the lower surfaces of adjacent color filters”
10 have been added to claim 1. These limitations find support in paragraph in Fig.4, for instance, and no new matter is introduced.

Claim 1 teaches a method of for fabricating a liquid crystal display (LCD) with a uniform common voltage, and includes the limitations distinct from the Kodate, APA,
15 and Nishida (see the argument made to rejection of claim 9). Therefore, claim 1 should be allowed, and reconsideration of claim 1 is therefore requested.

Claims 2, 4, 6-8:

20 Claims 2, 4, and 6-8 are dependent on claim 1, and should be allowed if claim 1 is found allowable. Reconsideration of claims 2, 4, and 6-8 is politely requested.

**2. Rejection of claims 3 and 11 under 35 U.S.C. 103(a) as being unpatentable over Kodate (US 5,748,266) in view of Admission and Nishida et al. as discussed
25 above and further in view of Kurauchi et al. (US 5,917,572):**

Claim 3:

Claim 3 is dependent on claim 1, and should be allowed if claim 1 is found allowable. Reconsideration of claim 3 is requested.

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Claim 11:

Claim 11 is dependent on claim 9, and should be allowed if claim 9 is found allowable. Reconsideration of claim 11 is requested.

3. New claim 17:

5 New claim 17 is listed hereinafter for reference:

Claim 17 (new) A method for fabricating a liquid crystal display (LCD) with a uniform common voltage, the method comprising:

providing a lower substrate;

10 forming a plurality of scan lines, a plurality of common electrodes, and a plurality of common electrode pads on an upper surface of the lower substrate, wherein the common electrodes are adapted to transmit a common voltage, and the common electrode pads are electrically connected to the common electrodes;

15 forming a plurality of data lines on the upper surface of the lower substrate, wherein the data lines are arranged substantially perpendicular to the scan lines to form a pixel matrix comprising a plurality of pixels, and each pixel comprises a plurality of sub-pixels;

providing an upper substrate;

20 forming a plurality of photo spacers on a bottom surface of the upper substrate, wherein each photo spacer is substantially aligned with one of the common electrode pads on the lower substrate, each photo spacer is located between adjacent pixels, and is not located between adjacent sub-pixels of a same pixel;

forming a conductive material layer on the bottom surface of the upper substrate to covering the surface of the photo spacers;

25 combining the upper substrate and the lower substrate face to face by using the photo spacers to support a space between the upper substrate and the lower substrate, and electrically connecting the conductive material layer covering the surface of each of the photo spacers to the common electrode pads corresponding to each of the photo spacers; and

30 filling a plurality of liquid crystal molecules in the space between the upper substrate and the lower substrate, and sealing the space between the upper substrate and the lower substrate.

Claim 17 includes the limitation "each pixel comprises a plurality of sub-pixels" and "each photo spacer is located between adjacent pixels, and is not located between adjacent sub-pixels of a same pixel".

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Regarding US 5,748,266, the spacers 78 are located between any two adjacent pixels and any two sub-pixels as shown in Figs.6, 7, and 8. Therefore, Kodate fails to teach that the spacer is not located between adjacent sub-pixels.

10 In addition, MPEP 2143.01 (I) teaches: "the prior art must suggest the desirability of the claimed invention". *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.). The level of
15 skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999). Nishida's invention is proposed to make the pixel regions of different colors have different cell gaps by altering the thickness of the color filters in different pixel regions, so as to improve display effect as illustrated in Nishida's col. 16, lines 41-44,
20 Fig.11(b) and col. 17, lines 6-18. On the other hand, the claimed invention is directed to provide a uniform common voltage. Since the purpose of Nishida's teaching is different from the claimed invention, it lacks motivation to combine Nishida with Kodate to obtain the claimed invention.

25 Consideration of claim 17 is requested.

4. New claim 18:

New claim 18 is listed hereinafter for reference:

18 (new) An LCD with a uniform common voltage, the LCD comprising:
30 a lower substrate comprising:
a plurality of scan lines and a plurality of data lines, wherein the data lines are arranged substantially perpendicular to the scan lines to form a pixel

matrix comprising a plurality of pixels, and each pixel comprises a plurality of sub-pixels;

a plurality of common electrodes adapted to transmit a common voltage; and
a plurality of common electrode pads electrically connected to the common electrodes;

an upper substrate positioned on the lower substrate oppositely, the upper substrate comprising:

a plurality of photo spacers positioned on a bottom surface of the upper substrate for supporting a space between the upper substrate and the lower substrate, wherein each of the photo spacers substantially aligns with one of the common electrode pads of the lower substrate, each photo spacer is located between adjacent pixels, and is not located between adjacent sub-pixels of a same pixel; and

a conductive material layer positioned on the bottom surface of the upper substrate covering the photo spacers, wherein the conductive material layer covering the photo spacers is connected to each of the common electrode pads corresponding to each of the photo spacers; and


a plurality of liquid crystal molecules filled in the space between the upper substrate and the lower substrate.

Claim 18 includes the limitation “each pixel comprises a plurality of sub-pixels” and “each photo spacer is located between adjacent pixels, and is not located between adjacent sub-pixels of a same pixel”.

Consideration of claim 18 is requested in view of the above argument made to new claim 17.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,



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Winston Hsu, Patent Agent No. 41,526

5 P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

- 10 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)